WATCH OUT FOR *Witchweed*

a parasitic plant
that attacks
corn
sugarcane
sorghum
and other
plants

PA-331

UNITED STATES DEPARTMENT OF AGRICULTURE

WITCHWEED

(A) corn plant stunted by witchweed

(B) general appearance of the weed

(a) seed pods

(b) blossoms

(C) attachment of weed root to corn root (greatly magnified)

The pencil is to indicate actual size of plant

WATCH OUT FOR *Witchweed*

a parasitic plant that attacks corn, sugarcane, sorghum, and other plants

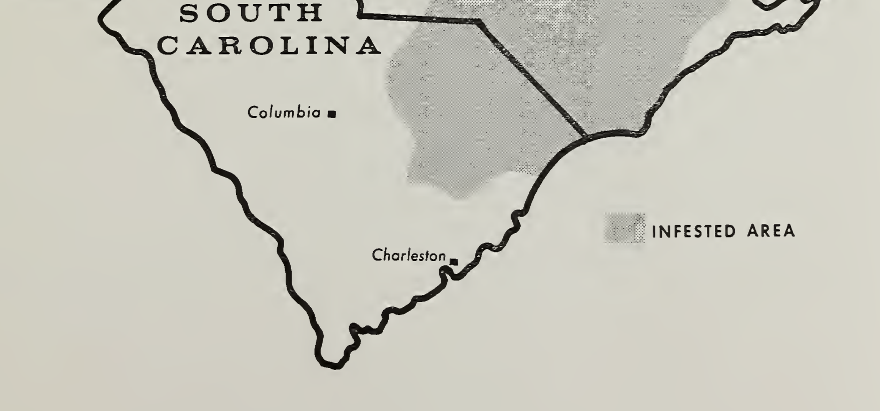
Witchweed [1] is a parasitic plant that attacks corn, sorghum, sugarcane, rice, wheat, oats, barley, and more than 60 species of the grass and sedge families, and some broad-leaved plants. This weed is a serious pest in South Africa, and occurs in many other parts of the Eastern Hemisphere. It was first discovered in the Western Hemisphere in adjoining areas of North Carolina and South Carolina in 1956.

Each year intensive surveys are made in counties adjacent to those originally found infested. Eradication measures under the State-Federal program are extended to all infestations as soon as they are found. The area of known infestation is shown on the map below.

DAMAGE

The amount of crop damage depends on the degree of infestation.

When witchweed was first discovered



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[1] *Striga asiatica* (L.) Kuntze.

in the Carolinas, corn yields in some fields were complete failures.

Witchweed roots attach to and penetrate the roots of host plants. This reduces the efficiency of host plants in obtaining food and water.

Symptoms resemble those produced by acute drought. The plants become stunted; they wilt and turn yellowish. They die if they are heavily parasitized.

APPEARANCE

Witchweed plants above ground are small and bright green. The leaves are slightly hairy and the upper and lower leaf surfaces look alike.

The plants rarely grow more than 8 or 9 inches high. Some, however, may reach a height of 18 inches.

The flowers are small and usually brick red or scarlet, although some may be yellowish red, yellow, or almost white.

HOW IT GROWS

The seeds, which are nearly microscopic, may lie dormant 15 to 20 years. They may be spread by wind, water, or anything that moves seed-infested soil. A witchweed plant can produce up to half a million seeds.

To germinate, a seed normally must be stimulated by secretions from roots of host plants or other plants that produce the stimulant.

When the witchweed seedling starts to grow, its roots must contact, attach to, and penetrate the roots of a host. Otherwise, it dies.

After its roots penetrate roots of a host, the witchweed depends on the host for food and water until it emerges from the soil.

The shoot emerges from the soil about 30 days after germination. After emergence, the plant turns green and manufactures its own food but continues to depend partially on the host for water and minerals.

Flowering begins 20 to 30 days after the seedling emerges. The first flowers appear near the base of the plant.

Mature seeds are present 9 days after blossoms open. After 12 days a high percentage of seeds are viable. Seed pods burst open 3 to 4 weeks after flowers appear.

Seeds scatter over the soil for the next month or so. Germination, flowering, and seed production continue until frost.

The life cycle of the parasite—from germination to release of first seeds—takes 70 to 90 days.

Witchweed grows best in warm temperatures and on light soils containing considerable moisture. It will, however, grow under a wide range of soil, temperature, and moisture conditions.

CONTROL

Control witchweed by reducing the amount of witchweed seed in the soil. Stimulate germination of seed in the soil and destroy witchweed plants after they emerge from the soil but before they produce seed.

Witchweed on cultivated land

To destroy witchweed in your fields where infestations are limited, plant corn to stimulate witchweed seed germination. After witchweed emerges from the soil—at flowering time or just before flowering time—apply an amine salt of 2,4-D at ½ to 1 pound acid equivalent [2] per acre. Repeat the treatment at 3- or 4- week intervals or as often as needed to prevent flowering and seed production.

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[2] The amount of acid equivalent stated on the container label is the amount of active ingredient.

Witchweed in broad-leaved crops

Cotton, peanuts, soybeans and other broad-leaved crops are not parasitized by witchweed, but these crops and others produce the stimulant necessary to germinate the witchweed seed.

Crabgrass and other weedy grasses are hosts for witchweed. All crops must be kept free of weedy grasses such as crabgrass. Use the best cultural practices and herbicides available on cotton, soybeans, peanuts and other broad-leaved crops to prevent the growth of weedy, grass host plants.

In early harvested crops, such as cucumbers and tobacco, an infestation of witchweed may appear on crabgrass or other weedy grasses after the crop is harvested. Fields of these crops should be sprayed periodically with 2,4-D to prevent witchweed from blooming.

Witchweed on noncultivated land

On noncultivated land, spray witchweed plants with 2,4-D or any other effective herbicide before they bloom. Repeat the treatment as often as necessary until all host plants are killed by frost.

QUARANTINE REGULATIONS

Do not move dirty farm or construction equipment from witchweed-infested fields or quarantine areas. To do so spreads witchweed, and is a violation of State and Federal quarantine laws. Have your equipment certified by county, State, or Federal quarantine representatives before moving it. Have soil samples fumigated before sending them for testing.

OTHER SUGGESTIONS

Notify your county agricultural agent if you find witchweed or a plant that you think may be witchweed.

Do not move plants suspected of being witchweed—request an on-the-farm identification from your county agent.

Ask your county agent or State regulatory official to explain the cooperative State-Federal eradication program.

PRECAUTIONS

Herbicides can be poisonous to man and animals. Handle them with care. Follow the directions and heed all precautions on the labels.

Keep herbicides in closed, well-labeled containers. Store them where they will not contaminate food or feed, and where children and pets cannot reach them.

Avoid repeated or prolonged contact of herbicide with your skin. Avoid spilling it on your skin, and keep it out of your eyes, nose, and mouth. If you spill any on your skin, wash it off with soap and water.

After handling a herbicide, do not eat or smoke until you have washed your hands and face. Wash your hands and face immediately after applying herbicide.

When handling herbicides, wear clean, dry clothing. If you spill herbicide on your clothing, launder the clothing before wearing it again.

To protect fish and wildlife, do not contaminate lakes, streams, or ponds with herbicide. Do not clean spraying equipment or dump excess spray material near such water.

Empty containers are particularly hazardous; crush and bury them in a place where the residues they contain can cause no contamination or injury.

SPRAY DRIFT

Wind-carried droplets of herbicide may kill susceptible crops near the area that is being treated. To reduce the danger of damaging crops with spray drift—

- Use nozzles that apply a coarse spray.
- Use low pressures—no more than 40 pounds per square inch for boom sprayers, 100 pounds for spray guns.
- Avoid spraying on windy days; do not spray when the wind velocity is more than 10 miles an hour.
- Spray when wind is blowing away from susceptible crops and toward the area being sprayed.

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